

**UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF NEW YORK**

SAMUEL M. ROBERTS,

Plaintiff,

11-cv-6206(L)

-vs-

LOS ALAMOS NATIONAL SECURITY, LLC,
AWE, PLC, and MASSACHUSETTS
INSTITUTE OF TECHNOLOGY,

Defendants,

AWE, PLC,

Third-Party Plaintiff,

-vs-

UNIVERSITY OF ROCHESTER,

Third-Party Defendant.

Declaration of Dr. Colin J. Horsfield

Dr. Colin J. Horsfield, being duly sworn, does depose and state as follows:

1. I am over the age of 18 and am competent to give this Declaration, which is based upon my personal knowledge of the events described below.
2. I obtained a Bachelor's Degree in Science from Glasgow University in 1988, and in 1999 obtained a PhD in Fabrication of Laser Fusion Targets. I am currently employed by AWE, plc ("AWE") as a Scientist. I have been employed by AWE in that capacity, or in similar research positions, since 1988. My principal area of expertise is Laser Fusion Diagnostics.



3. I am familiar with the University of Rochester's Laboratory for Laser Energetics ("LLE"), as I, along with other AWE employees, have participated in experiments conducted at the LLE. All of my experience at the LLE has been with the Omega Laser Facility, ("Omega Facility") which is one of the experimental facilities at the LLE. I have participated in approximately 20 experiments at the LLE and the Omega Facility since 2002, and am generally familiar with the rights and responsibilities of visiting researchers from AWE when participating in experiments at LLE.

4. I was present at the LLE as a visiting researcher on August 6, 2008 (the "Shot Day"), the day in which Sam Roberts was injured (the "Accident"). In addition, three other AWE employees - Mike Rubery, Dave Drew and Warren Garbett - were part of the AWE research team that day. I served as the principal point of contact on behalf of AWE for purposes of communicating with the LLE and other researchers for planning and conducting the experiments scheduled for August 6, 2008.

5. As had been the practice during prior experiments at LLE, the researchers begin planning the various experiments to be conducted at LLE months before the actual experiment day. The experiment which we planned to conduct on the Shot Day was part of a multi-year experiment known as DT Ratio. This shot day in the DT Ratio experiment was proposed by Dr. Hans Herrmann, a research scientist employed by the Los Alamos National Laboratory ("LANL"). I have worked with Dr. Herrmann on a number of experiments over the years. In the late spring and early summer of 2008, Dr. Herrmann communicated with me and other scientists involved in the DT Ratio experiment - including Dr. Vladimir Glebov, a senior scientist at the LLE who is employed by the University of Rochester - about the planned laser "shots" for the Shot Day. Based upon these communications, Dr. Herrmann submitted Shot



Request Forms ("SRF") which set forth the proposed technical configurations for each "shot". On these SRFs, five individuals were identified as "PI's" - Dr. Herrmann, Dr. Glebov, myself, Dr. Johan Frenje of MIT, and Dr. George Kyrala of LANL. While all five of us were involved in the design of the experiments scheduled for the Shot Day, Dr. Herrmann was the lead scientist in terms of dealing with the LLE and the Omega Facility.

6. On the Shot Day, most of the research scientists arrived at the LLE early in the morning before the first planned "shot". Most of the time during the Shot Day - as was typical during the other experiments I have participated in at the Omega Facility - the research scientists sat in a conference room adjacent to a control room occupied by the Shot Director. It was my understanding that the Shot Director exercised ultimate control over the Omega Facility during experiments, including whether to proceed with a particular shot, and supervising the LLE employees who operated the Omega Facility and handled operations inside the Target Bay, in which diagnostics and other equipment are located. The research scientists, in turn, sit in the room adjoining the Shot Director's control room (which is located some distance from the Target Bay) and review the data and/or results created by each shot.

7. During the early part of the Shot Day, those of us involved in the DT Ratio experiment were focused on the results obtained from a Gas Cherenkov Detector (GCD1). The GCD1 is a diagnostic which is physically attached to the Target Chamber (which is located in the Target Bay), and which allows researchers to capture a particular type of data arising from a "shot". After the first three shots the GCD1 failed to operate therefore we were not able to capture any further useful information. After discussions with other members of the research team, we approached Dr. Glebov about using a different diagnostic known as the "Light Pipe". Like the GCD1, the Light Pipe is a diagnostic piece of equipment which is physically attached to *eff*

the Target Chamber and is used to collect data from "shots". Dr. Glebov obliged our request to utilize the Light Pipe. To capture the data we were seeking while using the Light Pipe, it was necessary to change the Photomultiplier Tube ("PMT") at the "bottom" of the Light Pipe, which is found in an area known as "La Cave", and is located underneath the Target Bay. A PMT is a device that converts optical signals into electric signals so that the signal may be measured. The PMT does not affect the function of the Light Pipe; rather, it receives and transmits data from the back end of the Light Pipe so that it can be captured and analyzed. During the afternoon of the Shot Day, I along with LLE and LANL staff entered "La Cave" to change the PMT to allow for data capture during the DT ratio experiment and to prepare other equipment such as oscilloscopes. Notwithstanding our efforts, the PMT failed and was replaced. The replacement PMT had a much lower gain and proved on subsequent shots to be insufficient for the experiment. We, therefore, stopped using the Light Pipe and advised Dr. Glebov that we would not require this diagnostic for any additional shots. After one or two further shots I saw emergency personnel enter the building and a Los Alamos technician, Scott Evans, emerged from the Target Bay and advised that Sam Roberts had been injured.

8. The Light Pipe was not designed, manufactured, installed, maintained, serviced or operated by anyone affiliated with AWE. With the exception of the portion of the Light Pipe which enters "La Cave", I have never seen, operated or adjusted the Light Pipe in any manner, and the same is true for the other AWE employees who have used the Omega Facility. I am personally familiar with Sam Roberts. I neither recall seeing him at the LLE on the Shot Day before the accident, nor any specific communication I may have had with him that day. However, I can say with absolute certainty that I did not direct him in regards to the use, operation, adjustment, or pressurization of the Light Pipe on the Shot Day, or any other day in

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which I have used the Omega Facility. It is my experience that any direction or instruction which concerns the use, operation, or adjustment to any part of the target bay, of within the target chamber, is handled solely by LLE/University of Rochester personnel - typically the Shot Director, or someone working under his direction and control.

9. I have reviewed the affidavits submitted by Dr. Glebov, Dr. Herrmann, and Samuel Morse in support of the Motions for Summary Judgment filed by the University of Rochester and Los Alamos National Laboratory. I am personally familiar with Dr. Glebov, Dr. Herrmann, and Mr. Morse from my work at the LLE and the Omega Facility.

10. On the Shot Day I interacted with Dr. Glebov on a few occasions, and concur with Dr. Glebov's statement in paragraph 22 of his affidavit that following our statement to Dr Glebov that we had no further use for the light pipe neither I, nor anyone associated with AWE, had any involvement with the subsequent decision to adjust the pressure of the Light Pipe or gave any instruction to Sam Roberts concerning the use, operation or adjustment to the Light Pipe.

11. As to the affidavit submitted by Mr. Morse, the descriptions of the role that I had as secondary principal investigator - to be on site to access the data generated by the experiments held that day - and the fact that neither I, nor anyone associated with AWE, had the right or authority to direct the operations or employees of the LLE, especially in the target bay - is an accurate description of the practices and procedures which I observed on the Shot Day. Further, the practices and procedures described by Mr. Morse are consistent with the practices and procedures followed by AWE personnel in the 10 years that I have participated in research experiments at the Omega Facility.

12. Likewise, I agree with Dr. Herrmann's description of the procedures followed for



implementing scientific testing proposals and the authority of the respective parties with respect to conducting shots and operating the equipment at the LLE.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed: 6th Nov, 2012
ALDERMASTON, United Kingdom



Colin J. Horsfield